



Investing in urban underground space – maximising the social benefits

Author of article: Agostino Viglione (Young Member of SIG)

Authors of paper: S. Bricker, L. von der Tann, E. Reynolds, C. Bocci, P. Salak

The benefits for the community, as well as the social impact evaluation, are some of the topic that should be taken in account when a big infrastructure project is going to be developed.

The social value is commonly defined as the contribution that projects and investments make to society and which results in a positive impact to people's lives. Sometimes, especially for the underground projects, it is unappreciated with the results that the space beneath the ground remain unplanned, not engineered or managed in a way to realise its potential value.

Main drivers in the social value evaluation are been founded in cost and risk analyses that are strictly linked with the community life style. According with this point of view, all the underground infrastructure projects seems to be no proficient comparing it with the surface project since the short-term costs and impact of development are often higher, but this is often outweighed by the longer-term societal benefits.



Figure 1. Example of urban subsurface use - © www.tduk.org/welcome

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Società Italiana Gallerie
Italian Tunnelling Society
Via Scarsellini, 14
20161 MILAN (Italy)
Tel. +39 02 25715805
segreteria@societaitalianagallerie.it
www.societaitalianagallerie.it

ORGANIZING SECRETARIAT



AIM Group International - Milan Office
Via G. Ripamonti, 129
20141 MILAN (Italy)
Ph. +39 02 56601.1
Fax +39 02 70048578
wtc2019@aimgroup.eu
www.aimgroupinternational.com

COMMUNICATION PARTNER



PPAN srl
Via Nomentana, 63
00161 ROME (Italy)
wtc2019@ppan.it
www.ppan.it





The value and the use of urban underground spaces are broadly increasing in line with cities growth as results of land cost increase and the research of more compact and efficient cities. The urban subsurface space is used for a wide variety of applications that deliver social benefits (Figure 1). Cities and towns have evolved to use and exploit the urban subsurface in a multitude of different ways, for example for water supply, transport infrastructure, buried utilities, and waste disposal.

To better assess the social value of an underground infrastructure project, the evaluation should be done using a framework not only based on economic valuation and monetary indicators but that embrace the concept of total impact measurement across financial, social, human and environmental capital.

The cost-benefit analysis, that at present remains the predominant tool to evaluate a project proposal, for underground development often fails to identify the broader and long-term societal benefits of subsurface utilisation. These benefits are delivered at a range of different spatial and temporal scales. In such cases, a cost-benefit analysis based on financial metrics will conclude a low financial return on investment, since broader social value is neglected.

The stakeholder's engagement and a more sophisticated life cycle and cost benefit analysis could allow to evaluate the intrinsic value, environmental services, and competing demands on underground space and resources correctly to reduce the 'value gap' and 'opportunity cost'.

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wtc2019@ppan.it
www.ppan.it

